

CORRESPONDENCE.

INTER-GLACIAL MAN.

SIR,—Will you allow me to record the discovery of Palæolithic flint implements, mammalian bones, and fresh-water shells in brick-earths below the Boulder-clay of East Anglia?

The great chalky Boulder-clay of this district I have shown in two Geological Survey Memoirs, now in the press, to belong to the early part of the Great Ice Age, and only to be “Upper Glacial” in so far as this district is concerned. Beneath this clay occur patches of brick-earth which may be of “Middle Glacial” age or even older, and from them I have obtained well-fashioned flint implements. These tools are the oldest yet described, although some of the well-known cave implements may be as old or older, their antiquity being doubtful, from the absence of Glacial deposits. The human remains from the Victoria Cave at Settle, beneath Glacial Clay, are in all probability of the same age as our Palæolithic gravels, and hence much newer than those in question.

I hope shortly to describe these interesting relics and their geological position fully.

SYDNEY B. J. SKERTCHLY.

H. M. GEOLOGICAL SURVEY, BRANDON,
September 1st, 1876.

THE STAINING OF ROCKS BENEATH THE MAGNESIAN LIMESTONE.

SIR,—Immediately below the Magnesian Limestone of Yorkshire there is a belt of shales and sandstones more or less red or purple in colour. For a long time these rocks were looked upon as a subdivision of the Permian Group, the main reason for placing them on that horizon being their marked red hue, which contrasts strongly with the blue or grey tints of the generality of the Carboniferous shales and sandstones. It is now, however, well known that these red beds are stained Carboniferous rocks, and as the staining is confined to the portions which are now capped by Magnesian Limestone, or which were probably once overlaid by that formation, there is good ground for believing that the Magnesian Limestone has had something to do with the change in colour. It seems likely that the effect has been produced by water, which has percolated through the Limestone and passed down into the stained rocks.¹

In the hopes of throwing some light on the nature of the chemical reactions by which the change in colour has been brought about, I made the following experiment: Water saturated with carbonic acid gas, and containing finely divided limestone, was dropped slowly on lumps of gritstone in such a manner that very small quantities of the powder dropped at the same time. After the process had been continued for about six weeks, the stone was found to be stained dark red, and the staining was particularly marked in the bluish grey varieties. The quantity of the colouring matter was too small to allow of its being analysed, but it seemed to me likely that some salt

¹ J. C. Ward, *Quart. Journ. Geol. Soc.* vol. xxv. p. 295; *GEOL. MAG.* Vol. IX. p. 389. J. Lucas, *GEOL. MAG.* Vol. IX. p. 338. For another case of rock staining see *Mems. of Geol. Survey of Great Britain*, vol. i. p. 45.